

# Towards the convergence of biotechnology and nanotechnology

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**Alfredo Maria Gravagnuolo;<sup>1</sup>**

Antonio Barbieri;<sup>1</sup> Lorenzo Cremona.<sup>1</sup>

<sup>1</sup>*Grafinetic (Customised Graphene Biomaterials), Milan, Italy*

[al.gravagnuolo@gmail.com](mailto:al.gravagnuolo@gmail.com)

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## Scientific and technical challenges in our radar

What does the future hold for two-dimensional (2D) materials? It lies in the convergence of biotechnology and nanotechnology. The potential applications of nanotechnology in the areas of healthcare and biomedicine are endless. Functionalisation and (bio)interfacing of 2D materials are key steps towards realising this paradigm.

Recently, graphene in human clinical trials and ISO standards have been significantly contributing to the deployment of graphene and derived materials in medicine - ushering in a new era of graphene-based healthcare applications [1]. Some promising biomedical applications are discussed [1, 2].

## Grafinetic

Our mission at Grafinetic is to bring values in biomedicine through **“customised” graphene based biomaterials**, and to transform the future of **sustainable, scalable** graphene production. In our opinion, the key to success is innovation through scientific and managerial **multidisciplinary**.

## Graphene processing for advanced materials in industry

The process of production of graphene-based composite materials and integration in products is not a simple addition exercise; it requires **customised pre-functionalisation and interfacing** processing steps. We present two examples in established (non-bio) applications - textile industry and concrete manufacturing - as proof of concept to demonstrate the know-how that we are generating in the industrial manufacturing of graphene enhanced products.

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## References

[1] GRAVAGNUOLO AM et al., (2024). Editorial: Biointerfacing 2D Nanomaterials and Engineered Heterostructures, Volume II. FRONTIERS IN BIOENGINEERING AND BIOTECHNOLOGY, Vol 12.

[2] GRAVAGNUOLO AM et al., (2021). Editorial: Biointerfacing 2D Nanomaterials and Engineered Heterostructures. FRONTIERS IN BIOENGINEERING AND BIOTECHNOLOGY, Vol 8.

Figures

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